Master Gardener
UNIVERSITY OF MINNESOTA

Northeast Minnesota Master Gardener

AUGUST 2012

COMMUNICATING & EDUCATING WITHIN OUR REGION

SERVING CARLTON, COOK, LAKE AND ST. LOUIS COUNTIES

State Master Gardener Program Updates

June Recap of State Advisory Board

by Kit Sitter, Lake County Master Gardener

As your Northeast representative, my first meeting on the State MG Advisory Board was in June and following are a few of the highlights of that meeting. State Director, Julie Weisenhorn reported that the 2013 core training course will be January 11-February 2; the online course will start January 14. The Midwest Conference (which has already occurred) began July 19 and is hosted by Minnesota. July 19 has also been designated by the Governor as Master Gardener Volunteers Day. The state seed trials have begun and 110 people are participating. A BioChar research test plot has been installed at the Arboretum. BioChar is a byproduct of biomass fuel, increases soil microbes, and when applied, it lasts for years in the garden soil.

Matt Musel from the U Foundation talked about donations and demographics of Master Gardener donors to the Extension MG Fund. Comparing 2011 to 2010, there were 18 fewer gifts made, but the average amount per gift increased from $76 to $105. Two thirds of the donors to the fund are Master Gardeners and the average MG who donates to the U gives about $3000 over a lifetime.

David Moen, Program Manager, has been visiting local sites around the state to learn the specific needs of various counties. Julie and Dave are attempting to streamline state policies so they will easily apply across the state, yet will respect differences of local organizations.

One group, of interest outside the Metro, has formed a West Collaborative made up of 10 counties to create a cooperative exhibit display and pool resources for educational opportunities.

The meeting concluded with a discussion of a revision of the Advisory Board operating policies, and an informal tour of the Arboretum Learning Center's new outdoor nature play area. The next meeting will be September 21. If you have a concern that the Board should address, please contact me at (218) 525-4138. Or, you can e-mail me at lakeriley@aol.com

Tomato IPM for Gardeners

August 14, 2012 11:30 a.m. to 1:00 p.m.

Master gardeners will learn how to manage tomato pests and diseases throughout the season. Additional topics include variety selection, planting and garden clean-up. Register now. Priority will be given to group registrations, although individuals may also register and participate in the webinar. For more information and to register, please go to http://learn.extension.org/events/580.

The webinar will be recorded and available to view on your own time shortly after production.

IN THIS ISSUE

Follow Up on Back Care for the Gardener

by Sarah VanderMeiden

In the last issue of the *Northeastern Minnesota Master Gardener Newsletter*, I shared some ways to keep your back healthy this gardening season. As we head into August, how is your back doing? I am pleased to report that my back is doing pretty well. However, gardening season didn't start out that way.

Yes, I'll admit it, with the pressure of planting season in May, I didn't exactly follow my own advice. After my back surgery, I was told I should not bend down from the waist for about a year. Just try telling that to a gardener! After several days of weeding and planting, I recognized some of the warning signs that my back was NOT happy and got serious about finding adaptive methods and tools to complete my tasks in the garden. Fortunately, I discovered I already owned items that have become my "go-to" tools in adapting gardening tasks to the needs of my back.

Garden Hopper Will Get You Rolling!

Made by Step 2, the Garden Hopper is a seat with wheels you can use to roll yourself down your garden rows. Made of sturdy plastic, the Garden Hopper is easy to keep clean and has a convenient storage space for tools. Plus it doubles as a fun toy for my 15-month old daughter! Just make sure you make your rows wide enough to accommodate the width of the Hopper. (Oops)

3-Legged Camping Stool Finds New Purpose

Since many of my rows can't accommodate the Garden Hopper, I have turned to my trusty 3-legged stool. Originally bought for camping, this lightweight folding stool is super comfortable and super portable. A great weeding companion, it's quick and easy to sit on and just as easy to reposition as you work your way down the row. Just be careful while you are sitting back down or you may lose your balance! Also, resist the temptation to reach too far to get that last weed as that will put a lot of strain on your back.

My Friend, the Garden Fork

Is there a more versatile tool than the garden fork? I have used this trusted friend to pry up sod, loosen soil, and wrestle plants out of the ground without damaging too many of their roots. This summer, I have relied on my industrial-strength Fiskars Garden Fork to loosen pesky garden weeds prior to having a seat on my stool to pull them up.

Reuse, recycle an old rake and take care of your back at the same time.

Broken Rake Given New Life

There are some gardening tasks that just aren't practical to do sitting down. For instance, cleaning out your garden beds. Once you're finished raking, how do you transfer the yard waste from the ground to your wheelbarrow? No, you don't need to run to the store to buy those fancy oversized garden hands. You can simply use two rakes to grab and transfer the waste. I happen to have a rake with a broken handle that works perfectly for this task.

So what methods and tools have you discovered to preserve your back while gardening? Please share your ideas with me by sending them to scandihoo@yahoo.com and I will pass them along in a future issue of the *Northeast Minnesota Master Gardener Newsletter*.

Additional Resources:

http://www.networx.com/article/10-tips-for-gardening-with-a-bad-back

http://www.squidoo.com/gardenbackcare

Illustrated Practical Guide to Gardening for Seniors by Patty Cassidy

Accessible Gardening: Tips & Techniques for Seniors & the Disabled by Joann Way

Cook County Master Gardeners

Pesticides & Gardening

What Don't We Know?

By Diane Booth

I am a gardener because I love to watch a seed germinate into a plant, flower and produce seed once again. That cycle is always a miracle and keeps me gardening. However, part of me also grows vegetables because I like knowing the food I produce is done without spraying pesticides. I will happily lose a portion of my crop to insects or disease rather than add chemicals to my process.

In the United States, we rely on 2% of our citizens to produce our food supply. Growers and processors, growing food for so many people, make more complicated decisions than I do when it comes to food production. One of those decisions includes the use of pesticides.

Pesticides are designed to kill living organisms – insects, plants and fungi that are considered 'pests'. Many pesticides pose health dangers to people. Those risks have been established by independent research scientists and physicians across the world. Different pesticides have been linked to a variety of health problems: brain & nervous system toxicity, cancer, hormone disruption, skin, eye & lung irritation.

The Environmental Working Group (EWG) released a 2012 Shopper's Guide to Pesticides in Produce. On that list are twelve fruits & vegetables that are more likely to contain pesticides a.k.a. 'the Dirty Dozen'. They are: apples, celery, sweet bell peppers, peaches, strawberries, imported nectarines, grapes, spinach, lettuce, cucumbers, domesticated blueberries, potatoes. They also include two additional vegetables this year: green beans and kale / greens. Their recommendation is to continue to eat lots of fruits and vegetables but to purchase the above listed foods from organically grown sources.

The EWG has also come up with a list of the fifteen most pesticide free vegetables a.k.a. 'the Clean 15'. They are: onions, avocados, sweet corn, pineapple, mangos, sweet peas, asparagus, kiwi, cabbage, eggplant, cantaloupe, watermelon, grapefruit, sweet potato and honeydew melon.

I know we are measuring whether pesticides are present in the different foods we purchase at the grocery store. Each year the Food & Drug Administration (FDA) samples 1% of the food supply or about 20,000 specimens grown domestically or imported. These vegetables and fruits are tested for up to 286 different pesticides. Results from 2007 – 2010 show that 32-37% of food contains pesticides within the regulatory tolerances while 1-4% of food contains pesticide amounts that are over the tolerances limit or the FDA has not established tolerances for those pesticides.

The questions I always come back to are, "How much of the pesticides over the years accumulates in the body and what long term effect does that have on my children and grand children? Are we measuring those effects?" Emerging research is finding that pesticide exposure – even in tiny amounts – can mess with the way our genes function throughout our lives.

Warren Porter, PhD, molecular & environmental toxicology expert from U W Madison says, "Products are not tested for how they affect gene expression and activity in humans. There is significant concern now that we may be affecting generations of unborn because of potential impacts to our genes and we may be passing these changes on to subsequent generations."

Porter also explains that 2 ingredients found in most processed foods – genetically engineered corn & soy – likely contain more pesticides because the plants are genetically engineered to survive sprayings of plant-killing glyphosate. The problem is the overuse of pesticides much like we are seeing with antibiotics in humans. This is leading to pesticide-resistant *superweeds*, forcing farmers to use higher doses of poison and to even 'stack' pesticides, using several different types on a crop.

The industrialization of the food system has made our food quick, convenient and cheap. Agribusiness & pesticide companies are not required to determine whether their chemicals are present in people. It is very expensive to do bioassays on people to determine the human body burden of pesticides. There is a lack of data available to answer the many questions about pesticides impact on health.

USDA (United States Department of Agriculture) also recommends the age-old advice: Eat more fruits & vegetables but wash them before you do so. Getting more fruits and vegetables into our diets is important for long-term health.

Both the USDA and the EWG offer good advice when it comes to fruits and vegetables. I will also continue to grow as much of my own food as possible and watch carefully for more research in the area of pesticides and genetic expression.

What's Eating My Garden? Besides Me!

by Kit Sitter

Enough is enough! First minimal snow cover, then early spring, then flood conditions, then caterpillar infestations, and now extreme heat and drought. What a challenging growing season this has been. If it weren't for my superb crop of blueberries or the fragrance of the lilies that have made it through, I'd be tempted to lay down my shovel and give up!

But there is always something to learn from adverse conditions and following are a few of the problems I have been dealing with in my garden. They have probably plagued you too, so it is good to be armed with knowledge of the enemy. And, be on the lookout for more than one outbreak.

Tobacco Hornworms are green with white lines on the side, a red curved horn and about 3" long. There are two generations per year. They may be found on tomato, eggplant, pepper, and potato plants, although I found one destroying a viola. Because of their camouflage green color, they are hard to spot until suddenly your plant has been defoliated overnight. The worms may be handpicked and dropped in water or Btk can be sprayed on them upon emergence. Chemical pesticides are also available; always follow package directions for use. If you see hornworms with "grains of rice" on their backs, those grains are parasitic wasp eggs. In that case, leave the worm alone and the wasps will attack additional hornworms.

Variegated Cutworms arrived in our area this spring with a potential second generation in July. The unusual occurrence was due to moths being blown up here from the south, it is unknown if they will return next year. The most distinguishing characteristic of this cutworm is the 4-7 pale yellow, circular spots on the back of the larva. Its general body color is variable, but usually brown. The underside of the caterpillar is cream colored. There is a narrow, orange-brown stripe along the side. The larva eat holes in leaves. As you've probably experienced, they have voracious appetites. There are anywhere from 1-3 cycles in a season. If you can catch them at an early stage, hand picking can be done or a Carbaryl or Permethrin product can be applied in the evening. Fall tilling may help reduce any overwintering larvae.

Forest Tent Caterpillars are on the rise and some sources say watch out for next year. This pest primarily attacks trees and shrubs, especially aspen and birch, stripping the foliage. Forest Tent caterpillars are at the upper edge of their approximate 10 year cycle. Their damage is restricted to once a season, usually in June. The height of the outbreak produces millions of worms per acre and creates a nuisance, but decreases quickly (they've eaten their food supply!) over the next couple years. Trees do not usually die from the defoliation, but are stressed and may become susceptible to other environmental or pest problems. The worms are bluish-black with a line of white spots down the back. Wasps and parasitic flies are natural controls, but homeowners can use Btk on small caterpillars in select areas, however the sheer numbers in a peak year may be overwhelming for complete success.

Variegated cutworm at a later instar stage. Advantageous eaters, here they are decimating hostas.
Photo credit: Jeff Hahn

Powdery Mildew is a fungus that I battle, especially on monarda. The plant leaves show a white spotty coating and, if not controlled, the fungus can spread very quickly resulting in leaves that yellow and drop, stressing the plant. The fungal spores can overwinter, are spread by the wind, and like warm, humid weather. Good air circulation, resistant varieties, and keeping the foliage dry helps deter the disease. If infection occurs, try Neem oil on the plant and destroy the affected leaves.

Hollyhock Rust is another fungal disease, the symptom being orange spots starting on the lower leaves and moving upward. The leaves will dry up and drop. The rust spores are spread by water splashing onto the leaves or by the wind. The malva family are hosts for overwintering spores as are infected hollyhock leaves left at the base of the plant. Infected plants or leaves should be burned or trashed, not composted. Good air circulation and watering plants near the base of the plant will help prevent the disease.

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Bees in the Garden

By Catherine Winter

This spring, I decided to start raising bees. I wasn't sure about putting a beehive in my city yard, but I quickly discovered that lots of other people were doing it, too. Urban beekeeping is sweeping the country. Everywhere you look, people are putting beehives in backyards, on rooftops and in community gardens.

This is a good thing for us gardeners. The number of native bees is declining, and most flowering plants require insect pollinators. So do lots of our favorite fruits and vegetables. Urban hobbyists are helping provide bees to pollinate our strawberries, beets, cucumbers and apples.

But to be honest, that's not why I wanted bees. I wanted bees because bees are really, really cool.

Before getting my bees, I took a class at the University of Minnesota. Here's a random list of fun things I learned about bees:

Honeybees aren't native to the United States. They're imported from Europe. But much of the food we grow depends on honeybees. About every third bite of food we eat exists because of pollinators, especially bees.

The queen isn't the boss of the hive. She's more like a well-tended slave, doing nothing but laying eggs. She gets one wild night of debauchery when she's young, flying out and mating with a bunch of different guys, and then she comes home and never leaves again (unless the hive swarms, but that's another story).

It takes 12 bees a lifetime of work to make one teaspoon of honey.

Bees will fly miles from the hive to forage. A tiny bee will find its way back home, laden with pollen and nectar, from four or more miles away. And then she'll tell her sisters how to get to that distant food source.

Male honeybees don't do any of the work in the hive. Their only purpose is to mate with a queen from another hive. It's expensive for a hive to keep a lot of drones, who eat honey and produce nothing, so at the end of the summer, the gals kick the guys out. A beekeeper I know saw this happening at his hive. When some of the drones tried to get back into the hive, the workers cut their wings off and threw them out again. "People say we should be more like bees," my friend said, "but I don't think so."

Another thing I learned that surprised me is that bees were in trouble even before colony collapse disorder hit. CCD has been in the news a lot since it was first identified in 2007, but bees have been declining in North America for decades. The number of honeybee hives is dropping, while the number of crops dependent on bee pollination is growing. Scientists believe bees are facing a perfect storm of problems: pesticides, disease, and loss of food sources. When thousands of acres are planted in corn or wheat, it creates a desert for bees. They need pollen and nectar from a variety of flowers all season long.

Orchards depend on bee pollination, but bees can't survive in an orchard that offers them blossoms only for a brief period every spring. Honeybee hives are trucked around the country on pallets so they can be there when the almond or fruit trees bloom. With the decline in American beehives, the cost of these trucked-in bees has skyrocketed.

I recently took a class on native pollinators, such as bumblebees, and learned that they're in serious decline, too. This is something we gardeners should worry about, because native bees are often better at pollinating New World plants we like to grow, such as tomatoes, peppers and blueberries. In fact, honeybees don't pollinate tomatoes. Tomatoes need bumblebees. Bumblebees vibrate in just the right way to make the tomato release its pollen. In greenhouses where tomatoes are hand pollinated, workers use a vibrator, like an electric toothbrush.

The good news is that, unlike a lot of crises that face our world, the plight of bees is one we gardeners can do something about.

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Catherine is showing her neighbor, Verna, and Verna's grandson Eli, a frame from her bee hive.

BOOK REVIEW: CROPS IN POTS

Author: Bob Purnell

With more people wishing to grow plants on patios and in small outdoor spaces, Crops in Pots fills the need for both useful horticultural information and plant suggestions, including appropriate varieties.

Container gardening, Purnell posits, has advantages over in-ground gardening because it allows the gardener to adapt the growing medium to the plant. Thus, gardeners can grow a wider variety of plants by grouping pots, and by grouping pots, can grow in proximity plants that would not ordinarily thrive side by side. Container gardening also allows the gardener to optimize light and water to minimize pests and disease. Pots can also be brought into a garage or home, thus avoiding the effects of adverse weather conditions.

Early chapters address pot material and size, planting mediums, and how to plant a pot or a basket. Attention is given to starting plants from seed. Information is clearly written and accompanied with photographs demonstrating a particular point. These photographs are especially useful to illustrate plant care: pruning, misting, dead-heading. Moreover, the pests and disease discussion is accompanied by great photographs.

The bulk of the book describes fifty different containers. Each container holds one or more vegetables, a flower and/or an herb, which, together, produce an attractive container. The "ingredients" for each container (seeds, starter plants, mix, pot size) are set off in the left hand column. The right hand column presents an inviting description of the pot. Instructions for growing the plants follows. A box, usually at the bottom of the page, gives a recipe which includes the vegetable, herb or flower as an ingredient. For example, "Fish Lovers Bouquet" is a 24 x 8" window box containing French tarragon, parsley, lemon thyme, and dill. All the plants are bought from the garden center. However, except for the tarragon, the plants could be started from seed. A picture of such a box shows how appealing the mature plants could be.

Throughout this section, a wide variety of containers are described and pictured, allowing the gardener's imagination to flourish. The book concludes with a listing of varieties suitable for container gardening. This book is not only packed with clear, useful information, it is a beautiful book whose pages are sure to arouse interest and fuel the drive to try container gardening. The heavy paper ensures, that although a paperback, the book will last a while. I think the book is well recommended to anyone, but especially a novice gardener, wishing to try container gardening.

Eleanor Hoffman, St. Louis County

Photo credit: www.shootgardening.co.uk/

Bees in the Garden *(Continued from page 5)*

Experts say one thing that can make a difference is planting flowers. If you want to encourage native bees, the Xerces Society recommends planting native flowers such as asters, monarda, liatris, lobelia, and echinacea. But garden flowers help, too, such as cosmos, catmint, and flowering herbs. It's helpful to have something in bloom at every point in the season. And if you can stand it, don't kill your dandelions before they go to seed. Dandelions are an important source of food for bees in early spring.

Another thing that will help bees is avoiding insecticides. I always check when I'm buying bedding plants now to see whether they've been treated with neonicotinoid insecticides. These are commonly used in greenhouses. They're effective because they work their way through plants, up into the leaves and flowers, but they're toxic to bees.

If you decide to take the plunge and actually start keeping bees, I highly recommend the U of M class with Marla Spivak and Gary Reuter. And I recommend joining your local beekeeping group for ongoing education and mentorship. Wherever you are, there's almost certainly a group. Some of your neighbors may already be members, with a hive in the back yard, on the back porch, or up on the roof.

What's Eating My Garden? Besides Me! *(Continued from page 4)*

If you're in the rare minority to avoid these garden challenges, lucky you! It is likely that one or more of the above pests will eventually visit you without invitation. So, file this information away for the eventual appearance of these pests. They may decide to help themselves to your salad bar this summer or next year. You can fight them and be more likely the only one eating and enjoying your garden.

2012 Calendar of Events

Carlton County

There will be a fall plant sale on Saturday, August 25 at the Carlton Pavilion, Willard Munger Trail from 8:30 a.m. to sell out. Call the Carlton County Extension office for more information at 218-384-3511.

Cook County

We will be offering a grape tour to look at different grape varieties growing in our county. The tentative date scheduled is Saturday, August 18th. If you are interested, please contact Cook County Extension at 218-387-3015.

St. Louis County

The Potato & Beet Festival will be held on September 18, 2012. For more information, please contact the St. Louis County Extension office at 218-733-2870.

Other Educational Opportunities

Turfgrass Maintenance with Reduced Environmental Impacts:
Wednesday, August 29, 2012 from 8:30 a.m. until 2:30 p.m.

This is a free training being held at the Mississippi Watershed Management Organization in Minneapolis, MN. Topics covered will include best management practices for managing turf grass (mowing, seeding, fertilizer and pesticide application, and more). An optional test is offered at the end of the workshop to earn Minnesota Pollution Control Agency Level I Certification in Turf Grass Maintenance Best Practices. Lunch and refreshment will be provided. Contact Sara Freeman at 763-478-3606 or sara@fortinconsulting.com.

Japanese Beetle Monitoring

Japanese beetle is known to occur broadly across the state of Minnesota. However, it has not been reported in Carlton, Cook, Lake or St. Louis counties.

The Minnesota Department of Agriculture and the University of Minnesota are attempting to better define the status of the Japanese beetle across Minnesota.

If you come across Japanese beetle in one of our counties, please take a digital photo of the beetle and e-mail it to: Arrest.The.Pest@state.mn.us

Include as much detail regarding the location as practical and roughly describe the number of beetles present and the plants they were seen on.

Please e-mail any reports and pictures of Japanese beetles to Jeff Hahn, hahnx002@umn.edu

Horticulture Day Open House at U of M North Central Research & Outreach Center—Grand Rapids

The annual Horticulture Open House will be held on Wednesday, August 29, 2012 starting at 2:00 p.m.

The following activities will be featured:

- Apple orchard tour
- Blueberry & strawberry tour
- Drip tape research workshop
- High tunnel developments
- Old-fashioned wagon ride tours of gardens
- Potato research project
- Asparagus and hydrangea trial sites

The Center is located on the east edge of Grand Rapids at 1861 East US Highway 169. For more information, please contact the Center at 218-327-4490.

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NE Master Gardener Newsletter
317 W. 5th Street
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317 W. 5th Street, Grand Marais, MN 55604

NEWSLETTER TEAM & COUNTY OFFICES:

Carlton County Office	**218-384-3511**	
Laurene Longsyo	218-879-1988	laurenel@netzero.net
Sarah VanderMeiden	218-879-3352	scandihoo@yahoo.com
Cook County Office	**218-387-3015**	
Diane Booth	218-387-3015	booth010@umn.edu
Lake County Office	**218-834-8377**	
Kit Sitter	218-525-4138	lakeriley@aol.com
St Louis County Office	**218-733-2870**	
Eleanor Hoffman	218-721-4693	ehoffman@hughes.net

We are looking for more people to help with the newsletter. If you are interested, please contact the above folks from your county.

STATE CONTACTS:

Julie Weisenhorn
State Master Gardener Director
612-625-1925
weise019@umn.edu
Blog: **http://blog.lib.umn.edu/efans/mgdirector/**

David E. Moen
State Master Gardener Program Manager
763-767-3874/888-241-0719
moenx010@umn.edu
Extension Regional Office, Andover
550 Bunker Lake Boulevard NW, Suite L-1
Andover, MN 55304

Master Gardener Webpage
http://www.mg.umn.edu/